



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/650,135

08/28/2003

Tetsurou Hamada

00682P0072US

6331

32116

7590

10/13/2006

EXAMINER

MILLER, CARL STUART

WOOD, PHILLIPS, KATZ, CLARK & MORTIMER  
500 W. MADISON STREET  
SUITE 3800  
CHICAGO, IL 60661

ART UNIT

PAPER NUMBER

3747

DATE MAILED: 10/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/650,135

Applicant(s)

HAMADA ET AL.

Examiner

Carl S. Miller

Art Unit

3747

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 and 3-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- ☒ Interview Summary (PTO-413)  
Paper No(s)/Mail Date 6/06/06.
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3-4, 6-9, 12-15, 17 and 21-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kessler in view of Kawamura and Hamai.

Kessler applies as per the rejection of Claim 1 in the last office action.

Kessler further teaches an inlet fitting for the valve on the side of the casing of the valve. Also, a seal is shown that would imply some type of outlet fitting on the case to feed the fuel into the manifold.

Kawamura teaches the idea of locating the inlet line in the upper section of the casing and clearly shows a flange mounted on the intake manifold for the outlet of the casing. No bolt holes are shown, but this type of fitting was common in the art and even if no bolts were used the flange itself would have constituted a fitting.

Finally, Hamai specifically teaches the use of a periodic opening period for a single point injector (see column 1, lines 31-37).

It would have been obvious to modify Kessler by using a top fed injector thereby necessitating an inlet in the top section of the casing as taught by Kawamura since Kawamura taught that such top fed injectors are commonly used in throttle body injection systems such as that to Kessler. Also, it would have been obvious to make the injector of Kessler a periodic injector since such in manifold injectors were common at the time of Kessler.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kessler, Hamai and Kawamura as applied to claim 1 above, and further in view of Mizushima.

Mizushima teaches the use of a grommet (412) located between two casing members for an injector wherein teach casing piece includes an indentation to locate the grommet when the casing halves are put together.

It would have been obvious to modify Kessler as noted above and to locate the wiring to the injector as taught by Mizushima because the latter was also an intermittent injector located within a casing having two halves.

Claims 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kessler, Hamai and Kawamura as applied in Claim 8 above and further in view of Parrish.

Parrish teaches the common practice of using a check valve on the inlet to an injector.

It would have been obvious to use a check valve in Kessler because the problem of unwanted backflow also existed in the Kessler device.

Claims 16 and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kessler, Hamai and Kawamura as applied to claim13 above, and further in view of Smith

Smith teaches the use of a vibration isolating sleeve on an injector and the sleeve obviously has a stronger elastic force than a simply O-ring seal would have since it would not serve to isolate the injector from engine vibrations if it did not.


It would have been obvious to isolate the injector tip of Kessler as taught by Smith since vibrations from the engine would have been a problem even though the injection was manifold injection.

Applicant's arguments filed 12/19/05 have been fully considered but they are not persuasive. In particular, applicant correctly notes that no specific rejection of Claim 2 was made in the last office action even though the claims was noted as rejected in the office summary. The omission of this rejection was inadvertent and a new rejection of Claim 1 (now including Claim 2 limitations) has been included in this action. It should also be noted that the single point injection of Kessler was not specifically described, therefore the examiner has now cited the reference Hamai to show that such periodic injectors in the intake were common at the time of Kessler. This action has been made non-final.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carl S. Miller whose telephone number is 571-272-4849. The examiner can normally be reached on MTWTHF.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steve Cronin, can be reached at 571-272-4536. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Carl S. Miller  
Primary Examiner